

WHAT IS CLAIMED IS:

1. **A pesticidal composition** comprising or including

- (i) at least one active ingredient that is lipophilic in character,
- (ii) at least one organic liquid carrier which carries at least most of the lipophilic active ingredient(s), thereby defining an organic liquid phase,
- (iii) levamisole, and
- (iv) at least water which carries at least most of said levamisole thereby defining an aqueous phase,

wherein said aqueous phase has a pH of less than 7,

and wherein there is present in said aqueous phase an emulsifying agent or agents,

and wherein said phases exist in, or can be shaken or agitated into, the form of an emulsion with said particulate content, if any, at least substantially present in the aqueous phase.

2. A composition of claim 1 wherein the lipophilic active ingredient is chosen from the class of macro cyclic lactones (hereafter "ML").

3. A composition as claimed in claim 1 or 2 wherein there is present in said aqueous phase a particulate content.

4. A composition as claimed in any one of the preceding claims wherein said aqueous phase has a pH of less than 6.

5. A composition of claim 4 wherein said aqueous phase has a pH of less than 5.

6. A composition as claimed in claim 5 wherein said aqueous phase has a pH of less than 4.

7. A composition as claimed in any one of the preceding claims wherein said aqueous phase includes a buffering system to buffer the pH.

8. A composition as claimed in claim 7 wherein said buffering system is a citric acid/citrate salt system.

9. A composition as claimed in any one of the preceding claims wherein said at least one organic liquid carrier is an oil.

10. A composition as claimed in claim 9 wherein said oil is a mineral or vegetable oil.

11. A composition as claimed in any one of the preceding claims wherein said organic liquid phase includes a co-solvent.

12. A composition as claimed in claim 11 wherein said co-solvent is benzyl alcohol.

13. A composition as claimed in any one of the preceding claims wherein said aqueous phase includes a particulate content of either an active agent or an inert substance.

14. A composition as claimed in claim 13 wherein the particulate active agent is a biocide.

15. A composition as claimed in any one of the preceding claims which includes in one or other, or both, of the partitioned phases one or more of the group comprising minerals and vitamins.

16. An anthelmintic composition of

about 0.08% ivermectin,

about 3% levamisole, and

about 2% albendazole

where different liquid carrier phases substantially partition the ivermectin from the levamisole, and

where the albendazole is particulate and is at least in part in an aqueous phase with the levamisole, such aqueous phase being buffered to a pH appropriate for the levamisole and its stability.

17. **A storage stable pourable pesticidal composition** having an organic first liquid phase and another ("second") liquid phase, said first phase including at least one active ingredient ("first active ingredient") (and optionally a co-solvent for said active ingredient) and said second phase including a second active ingredient

wherein the presence of an emulsifying agent and/or anti-flocculants ensures stability of the two phases with the first phase with its first active ingredient as an emulsion within said second phase with its second active ingredient.

18. **A stable mix of two or more immiscible liquids or liquid phases** held together by an emulsifier or emulsifiers where one phase is an organic water immiscible phase and another phase is an aqueous or organic phase.

19. A mix of claim 18 wherein said organic phase includes lactic acid.

5 20. **A benzimidazole composition** comprising an organic acid and a benzimidazole dissolved therein.

21. A composition of claim 20 wherein said organic acid is lactic acid.

22. **A topical or pour-on benzimidazole composition** where a benzimidazole is solubilised in an organic acid.

10 23. A composition of claim 22 wherein said organic acid is lactic acid.

24. **A benzimidazole containing composition** of at least two phases, where at least one phase is that of an organic acid which solubilises at least one benzimidazole active ingredient.

25. A composition of claim 24 wherein said organic acid is lactic acid.

15 26. **A ready to use pesticidal veterinary liquid composition** of at least a first active in a first liquid phase and at least a second active in a second liquid phase, the phases forming a stable emulsion.

27. **A storage stable pourable composition** comprising or including

20 up to 25% w/v of at least one pesticide (hereafter "first active(s)") soluble in an organic phase,

1 to 60% w/v of an organic phase (hereafter "first liquid phase") in which said first active(s) is (are) at least substantially soluble,

0 - 5% w/v of a co-solvent for said first active(s),

1 to 15% w/v of an emulsifying agent,

25 0 to 20% w/v of at least one further pesticidal active (hereafter "second active(s)") not substantially soluble in said first phase,

and,

a second liquid phase,

said composition having at least most of said first active(s) in said organic phase and said organic phase being emulsified in the second liquid phase which includes said second active(s).

28. A composition of claim 27 wherein said organic phase includes (i) a vegetable and/or mineral oil, (ii) at least one emollient ester, or (iii) both (i) and (ii).

29. A storage stable composition (whether as a concentrate for aqueous dilution or otherwise) comprising or including

up to 25% w/v of at least one pesticide (hereafter "first active(s)") chosen from the class of at least partly oil or emollient ester soluble actives,

1 to 60% w/v of at least one water immiscible organic phase in which said first active(s) is (are) at least substantially soluble,

0 - 5% w/v of a co-solvent for said first active(s),

1 to 15% w/v of an emulsifying agent,

0 to 20% w/v of at least one further pesticidal active (hereafter "second active(s)") not substantially soluble in said organic phase which is (i) dissolved in water and/or (ii) suspended in water,

and,

said water,

said composition having an organic phase with at least most of said first active(s), said organic phase being emulsified in an aqueous phase of said water and said second active(s).

30. A storage stable pesticidal composition having

an organic phase and an aqueous phase, said organic phase being of an oil and/or emollient ester which includes at least one active ingredient (and, optionally, a co-solvent for said active ingredient) and

an aqueous phase including a second active ingredient which is substantially insoluble in said organic phase

wherein at least one emulsifying agent and/or at least one anti-flocculant assists or ensures stability of the two phases with the organic phase as an emulsion within said aqueous phase.

31. A pourable pesticidal composition comprising or including

at least one active ingredient chosen from the class of macro cyclic lactones (hereafter "ML"),

at least one active ingredient chosen from the tetramisole/levamisole class,

at least one organic liquid carrier to provide a first liquid phase, and

5 means providing a second liquid phase,

and, optionally, an emulsifying agent or agents,

wherein said ML active ingredient(s) is(are) at least primarily in the first phase in solution,

10 **and wherein** said tetramisole/levamisole class active ingredient(s) is(are) at least primarily in solution in the second phase,

and wherein said phases exist in, or can be shaken or agitated into, the form of an emulsion.

32. A composition of claim 31 wherein said at least one organic liquid carrier is (i) at least

15 one oil or (ii) at least one oil and at least one organic co-solvent.

33. A **pesticidal composition** (whether as a concentrate for aqueous dilution or otherwise) comprising or including

at least one active ingredient chosen from the class of macro cyclic lactones (hereafter "ML"),

20 at least one active ingredient chosen from the tetramisole/levamisole class,

at least one organic liquid carrier, and

water,

and, optionally, an emulsifying agent or agents,

25 **wherein** said ML active ingredient(s) is(are) at least primarily in the organic liquid carrier(s) in solution (hereafter referred to as "the organic phase"),

and wherein said tetramisole/levamisole class active ingredient(s) is(are) at least primarily in solution in the water (hereafter referred to as "the aqueous phase"),

and wherein said organic phase and said aqueous phase exist in, or can be shaken or agitated into, the form of an emulsion.

34. A composition of claim 33 wherein said at least one organic liquid carrier is (i) at least one oil or (ii) at least one oil and at least one organic co-solvent

35. A **stable pourable composition** comprising or including

at least one anthelmintic active (hereafter "first anthelmintic active(s)"),

at least one liquid to provide a first phase in which said first anthelmintic active(s) is (are) at least substantially soluble,

an emulsifying agent,

at least one liquid to provide a second phase, and

at least one further anthelmintic active (hereafter "second anthelmintic active(s)") not substantially soluble in said first phase,

said composition having a first phase with at least most of said first anthelmintic active(s) and a second phase of at least most of said second anthelmintic active(s).

36. A **stable composition** (whether as a concentrate for aqueous dilution or otherwise) comprising or including

at least one anthelmintic (hereafter "first anthelmintic active(s)") chosen from the class of at least partly oil soluble anthelmintic actives,

at least one oil (optionally also with an organic co-solvent) in which said first anthelmintic active(s) is (are) at least substantially soluble,

an emulsifying agent,

water, and

at least one further anthelmintic active (hereafter "second anthelmintic active(s)") not substantially soluble in said oil(s) which is (i) dissolved in said water and/or (ii) suspended in said water,

said composition having an organic phase of said oil(s) with at least most of said first anthelmintic active(s) and an aqueous phase of said water and at least most of said second anthelmintic active(s).

37. A **stable formulation** of

a first active in an organic ("first") phase,

a second active in a second liquid phase, and

additional actives in one or other, or both, said phase(s),
and wherein said phases provide a stable emulsion,
and wherein at least one of said first and second actives is an anthelmintic active.

38. **A stable formulation of**

a first active in an organic phase at least primarily of oil(s),
a second active in an aqueous phase, and
additional actives in one or other, or both, said organic and aqueous phase(s),
and wherein said organic and aqueous phases provide a stable emulsion,
and wherein at least one of said first and second actives is an anthelmintic active.

39. **A pesticidal composition comprising or including**

(i) at least one active ingredient chosen from the class of macro cyclic
lactones

(hereafter "ML"),

(ii) at least one organic liquid carrier which carries at least most of said ML
active ingredient(s), thereby defining an organic liquid phase,

(iii) levamisole, and

(iv) at least water which carries at least most of said levamisole thereby
defining

an aqueous phase,

wherein said aqueous phase has and/or is buffered to a pH of less than 7,

and wherein there is present in said aqueous phase either or both

(a) an emulsifying agent or agents, and

(b) a particulate content,

and wherein said phases exist in, or can be shaken or agitated into, the form of
an emulsion with said particulate content, if any, at least substantially present in the
aqueous phase.

40. **An anthelmintic oil in water emulsion carrying** at least one macro cyclic lactone (ML) in the oil phase and particles of levamisole and an emulsifying agent for the levamisole in the aqueous phase.

41. **A method of formulating an anthelmintic composition** of a kind having

at least one anthelmintic (hereafter "first active(s)"),

a liquid or liquids to define a first phase in which said first active(s) is (are) at least substantially soluble,

(optionally) an emulsifying agent,

at least one further anthelmintic active (hereafter "second active(s)") not substantially soluble in said first phase

(optionally) anti-flocculant(s),

and,

a liquid or liquids to define a second phase,

said method comprising or including the steps of

(I)(a) providing a mix of said first active ingredient and at least the first phase liquid(s),

(b) providing a mix of said second active ingredient and at least the second phase liquid(s), and

(II) by mixing at least the mixes of (I)(a) and (I)(b) forming an emulsion with at least most of said first active in the first phase and at least most of the second active in the second phase.

42. **A method of formulating an anthelmintic composition** of a kind having

at least one anthelmintic (hereafter "first active(s)") chosen from the class of (at least partly) oil soluble anthelmintic actives,

an oil or oils in which said first active(s) is (are) at least substantially soluble,

optionally a co-solvent for said first active(s),

an emulsifying agent,

at least one further anthelmintic active (hereafter "second active(s)") not substantially soluble in said oil(s),

optional anti-flocculant(s),

and,

water,

said method comprising or including the steps of

(I)(a) providing a mix of said first active ingredient, the oil(s), the optional co-solvent(s) and the emulsifying agent(s),

(b) providing a mix of said second active ingredient the water, and the optional anti-flocculant(s), and

(II) by mixing at least the mixes of (I)(a) and (I)(b) forming an emulsion with at least most of said first active in the oil(s) and at least most of the second active in the aqueous phase.

43. **An anthelmintic composition** made by a method of claim 41 or 42.

44. **A method of treating mammals for pests** which involves (whether with dilution or not) administering or having self administered to such mammals effective amounts of active(s) of compositions of any one of claims 1 to 17, 20 to 40 and 43.

45. **The use of an anthelmintic composition** of any of the kinds defined in any one of claims 1 to 17, 20 to 40 and 43.

46. **A partitioned biocidal composition** comprising in an organic phase a first biocide,

and in an aqueous phase at acid pH a second biocide, said first biocide being unstable chemically at said acid pH.

47. **A partitioned biocidal composition** as claimed in claim 46 having particles suspended in at least the aqueous phase.

48. **A partitioned biocidal composition** as claimed in claim 47 wherein said particles are

themselves biocidal.

49. A partitioned biocidal composition as claimed in claim 47 wherein said particles are of

a benzimidazole anthelmintic.

50. A partitioned biocidal composition of claim 47, 48 or 49 wherein said particles are

substantially all less than 20μ .

51. A partitioned veterinary biocidal composition of any one of claims 46 to 50.

52. A partitioned composition of any one of claims 46 to 51 which is also a composition of

any one of claims 1 to 17, 20 to 40 and 43.